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REPORT OF THE FEDERAL HORTICULTURAL BOARD.

UNITED STATES DEPARTMENT OF AGRICULTURE,
FEDERAL HORTICULTURAL BOARD,
Washington, D. C., October 8, 1920.

S R: I submit herewith an executive report covering the administration of the plant quarantine act for the fiscal year ended June 30, 1920. The activities of the Federal Horticultural Board are indicated in the list of current quarantine and other restrictive orders appended to this report. These activities have been rather fully recorded in the Service and Regulatory Announcements of the board issued during the year, and these announcements, therefore, constitute an available record in some detail of the work of the board. This annual report is limited to a general discussion of the more important only of these activities.

Respectfully,

C. L. MARLATT,
Chairman of Board.

Hon. E. T. MEREDITH,
Secretary of Agriculture.

LINES OF WORK.

The work of the board may be classified as follows:

1. The administration of special appropriations by Congress for the control or extermination of newly established plant enemies, such as the appropriations on account of the pink bollworm of cotton and the potato wart disease and cooperative work in relation to appropriations assigned to the Bureaus of Entomology and Plant Industry for the control of other new plant pests, the quarantine provisions in relation to which are enforced in cooperation with this board under the plant quarantine act.
2. The port inspection service maintained by the board as an essential part of the enforcement of the several foreign quarantines and restrictive orders.
3. The general administration and enforcement of the miscellaneous foreign and domestic quarantine and other restrictive orders listed at the end of this report.

In the discussion of these more important activities, unless otherwise indicated, the record is carried to the date of publication and, therefore, covers substantially the crop season of 1920.

THE PINK BOLLWORM.

The discovery of the establishment of the pink bollworm in a limited district in Louisiana and its reappearance in southeastern Texas, together with an entire revision of the Texas pink bollworm law

greatly restricting control work, combined to give a new and very serious phase to the pink bollworm situation. For convenience in this report, the status of this problem in Texas and Louisiana will be separately considered.

REVIEW OF THE WORK IN TEXAS.

At the time of the preparation of my last report, October 1, 1919, no new infestations or reinfestations of old territory had been determined in Texas following the intensive inspection which had been conducted throughout that year. This was a most encouraging result and indicated the possibility of a successful outcome of the tremendous effort which was being made to control and exterminate this pest. In the latter part of October of that year, however, a few examples of the pink bollworm were found in one of the old infested areas of 1917 in the Trinity Bay district in southeastern Texas, and the later intensive surveys throughout the entire district and surrounding areas in the winter of 1919-20 resulted in the finding of some 43 infested fields scattered practically throughout this district. The infestation, however, was limited in practically every instance to a few plants or to small groups of plants and indicated just such a scattering return of the insect as would have been anticipated.

In the Pecos Valley the intensive field inspections of 1919-20 resulted in the finding of but one infested boll containing a single larva of the pink bollworm.

In the case of the Great Bend area the State had prohibited the growth of cotton in 1919, and this prohibition was made effective except as to one field, the growing cotton in which became infested and was later destroyed under State authority.

Following these discoveries of reinfestation in Texas, the entire areas involved were immediately subjected to intensive clean-up operations similar to those carried out in the winter of 1917-18 and as to the Pecos area in 1918-19, involving the uprooting and burning of all field cotton, the collection and destruction of all scattering bolls, the foreign export of the cotton lint, and the crushing of all seed. These operations were carried out with large expenditure of Federal funds but with the understanding that the State would immediately again declare and enforce under the existing State law a noncotton zone as to the reinfested areas with the purpose of completing the work of extermination of this pest.

The reappearance of the pink bollworm, particularly in the Trinity Bay district, emphasized very strongly the unwisdom of the abandonment of the original program for a two or three years' noncotton zone for the invaded districts of 1917, and pointed clearly to the necessity of immediately resuming this interrupted program if the extermination of the pink bollworm was to be effected. The reinfestations appearing after a one year noncotton zone can be probably explained by the holding over for one year of larvæ which have been buried deeply in the soil or otherwise protected. The possibility of such larval longevity has been fully established by the experts of the board in research work conducted in Hawaii and Mexico.

The departure from the radical program of extermination which had been agreed to between the State and Federal authorities involving noncotton zones for two or three years, or for such period as

might be determined to be necessary to stamp out the pest, was urged by the State authorities in response to the insistent requests of the planters, particularly in the Trinity Bay district, that the growth of cotton should be permitted as a try-out for 1919. In support of this request, it was urged by the planters and later by the State authorities that the cleanup of the winter of 1917-18 of this district had resulted in the nonreappearance of the pink bollworm in the season of 1918, either on volunteer cotton or in any of the fields which had been planted and harvested in defiance of the State regulations and that, therefore, the pest was presumably exterminated or substantially so. In response to these representations and in view of the strong feeling of the planters in the district, making it unlikely that a noncotton zone could be enforced, the board ultimately agreed to this change of policy but with the understanding that if such growth of cotton should result in the reappearance of the pink bollworm in the invaded district, the State would promptly reestablish noncotton zones for all infested areas and maintain them for such period as might be determined to be necessary to complete the eradication of the pest. In this agreement the State authorities and planters of the district joined. To make this action possible, the State pink bollworm act of October 3, 1917, was amended October 10, 1919, so as to permit the growth of cotton under regulation in the noncotton area established under the original act.

With the reappearance, however, of this pest late in 1919 in the Trinity Bay district, the planters of this district, eager to take advantage of the prospective high market value of cotton for the following year, entered strong objection to the proposal of the State to again authorize and enforce a noncotton zone for the district. There followed considerable discussion of the policy to be adopted, namely, whether to permit cotton to be grown under regulation with authority to destroy the plants in the infested fields from time to time if infestation should be determined, or to enforce an immediate and definite noncotton zone for the entire district in consummation of the plans and agreements which had been entered into by the State and planters as a condition for the try-out of the cotton crop for 1919. The former policy was ultimately approved by the State authorities in the belief that it was the only course possible under the powers given by the existing State pink bollworm law.

The department pointed out that the adoption of this policy would mean the practical abandonment of the fight to exterminate the pink bollworm in the United States. This point of view was also strongly emphasized at a conference of official entomologists and inspectors of other cotton States held at Vicksburg in March, and also at a general cotton conference, held at New Orleans in April to discuss the pink bollworm situation and particularly to determine what action the State of Louisiana should take to meet the emergency occasioned by the invasion by this pest of three parishes in that State.

These new developments pointed to the necessity of a Federal quarantine for the protection of other cotton-growing States. A hearing to form the basis of such quarantine was conducted in Washington April 6 and 7 and was largely attended by the officials interested and others of practically all the cotton-producing States of the Nation. As a result of the general discussion of the subject at this

hearing, the governor of Texas, who was present, promised to call a special session of the legislature for the purpose of so revising and supplementing the existing pink bollworm act of that State as to give the needed authority for control work and to provide by State appropriations funds for the enforcement of such special legislation. Such called session of the Texas Legislature was convened at Austin May 20, 1920, and continued for the full legal period of 30 days. The Department of Agriculture, on the invitation of the governor and the legislature, participated in the discussions in relation to the proposed legislation.

For nearly the full legal period of this session the legislature considered a pink bollworm bill which had been drafted by a committee appointed by the legislature for the purpose. This bill if enacted would have prevented all Federal or any other efficient control work in that State on account of the restrictions which it placed on inspection and control activities. At the last moment, however, the bill was discarded and another measure revising the existing act somewhat along the line of the department's recommendation was substituted. Unfortunately, under the 30-day limitation of this called session of the legislature, there was little opportunity to discuss and fully amend and perfect this substitute bill.

As enacted, June 19, 1920, the law omits important powers which were included in the law of 1919, but on the other hand is an improvement on that law in some respects and is perhaps the best legislation which was then obtainable under the conditions which had developed. The main defects in this law from the department's viewpoint are (1) that it does not immediately provide for the enforcement for 1920 of noncotton zones for the invaded districts; (2) that it fails to give authority to establish regulated and noncotton zones in counties bordering on Mexico on the determination of near-by infestation in Mexico and independent of any actual infestation in the counties concerned, as was provided for in the law of 1919; (3) that it limits the destruction of cotton to infested fields and therefore will prevent any regional destruction of cotton which may be necessary for effective work of extermination; and (4) that the establishment of noncotton zones provided for after 1920 is weakened by making it necessary to reestablish such zones yearly. There is also a question as to whether such zones can be established on such regional basis as may be necessary for effective extermination work.

The largest defect in the law from the department's viewpoint is its failure to provide for a noncotton zone for 1920 to put an immediate stop so far as possible to further multiplication of the insect in the invaded Trinity Bay district.

The law, on the other hand, provided for a continuation of all regulated zones for 1920, and also provided for regional clean-up of cotton fields after harvest in such zones. It further provided appropriation of \$100,000 to carry out the act, \$50,000 of which shall be for compensation of farmers for cotton destroyed, or other losses occasioned by the enforcement of the act, and \$50,000 for the administration of the act. An important feature of the law of 1920 is that it declares the pink bollworm to be a public nuisance and a menace to the cotton industry, and that its eradication is a public necessity. This action gives the law a stronger position should its validity be attacked in the courts.

The pink-bollworm developments during the season of 1920, subsequent to the passage of this act, are briefly reviewed in the discussion under the heading "Effective work not possible under new Texas law."

REVIEW OF THE WORK IN LOUISIANA.

The pink bollworm, previously believed to occur only in limited areas in Texas, was discovered early in February, 1920, to have invaded the parishes of Cameron, Calcasieu, and Jefferson Davis in southwestern Louisiana. After some two months of intensive work extending into April, with a considerable force, no infestation was found in Louisiana outside of these parishes. The most plausible theory of the infestation is that it originated in Cameron Parish through cotton seed presumably obtained for planting from Beaumont, Tex., in 1917, and has spread comparatively recently from Cameron to the two adjacent parishes on the north. There is, however, a possibility of wider infestation in Louisiana and possibly in Texas, due to shipments during the last three years of seed from these Louisiana parishes to various towns in these two States. The records indicate that such seed was shipped to the following towns in Louisiana: Shreveport, Monroe, Bunkie, Alexandria, Broussard, Eunice, and Gretna; and in Texas, to Houston, San Antonio, San Marcos, and Snyder.

There is strong reason to believe that the shipments to the Texas points listed have not resulted in the local establishment of the pink bollworm. Most of this seed, some 25 or 30 carloads, went to Houston, and in the case of these and all of the other shipments into Texas the seed was promptly milled and thus in large measure safeguarded. Furthermore, all of the places listed in Texas except Snyder, on account of their relationship to seed imported from Mexico in 1916, have been under intensive scouting for the last three years and no trace of the pink bollworm has been detected. In the case of Snyder, but a single carload of seed was received from Louisiana and this was in 1917 and the seed was immediately crushed.

A thorough field inspection surrounding the points in Texas and Louisiana to which had been shipped seed from the infested parishes in Louisiana, begun in February, 1920, with respect to the crop of 1919, has been continued. No infestation of the pink bollworm at any of these points has been reported to date, October 1.¹

Following an interstate conference called at New Orleans March 5, by Gov. Pleasant, of Louisiana, the State of Louisiana promptly enacted necessary legislation and established noncotton zones for all the infested districts and regulated areas for all the points within the State to which seed or cotton had moved from these infested districts. Provision was also made for a State fund of \$250,000 for the enforcement of such noncotton and regulated areas and for the reimbursement of planters in the noncotton areas for losses which they might sustain through the growth of crops less profitable than cotton.

The working out of this Louisiana legislation, which became effective early in July, 1920, has been most satisfactory. The prohibition of growth of cotton in the invaded parishes has been effi-

¹ Subsequent to the preparation of this report, the board has been advised of the finding of infestation in a field alongside the Louisiana Cotton Oil Co., in Bossier Parish, immediately across the Red River from Shreveport.

ciently maintained with full cooperation on the part of the planters, and the restrictions on cotton movement with respect to the points in the State which had received seed from these parishes in the two or three years prior to the discovery of the pink bollworm have been fully carried out.

In the case of both Louisiana and Texas, legislative provision is specifically made for cooperation on the part of the United States Department of Agriculture in the enforcement of quarantine and other control operations.

FEDERAL QUARANTINE OF TEXAS AND LOUISIANA.

As long as the pink bollworm was believed to be confined to fairly limited districts within the State of Texas and these districts were being adequately controlled by Federal and State authorities working in cooperation, there was no vital need for the enforcement of a Federal quarantine covering interstate movement of products out of Texas. As already indicated, the altered outlook for 1920 pointed strongly to the need of a Federal quarantine of Texas and Louisiana to prevent the spread of the pest to other cotton-growing States. The basis for such quarantine had already been established by the public hearing, conducted in Washington on April 6 and 7. Following this hearing, and in view of the fact that the Federal quarantine would probably modify or replace the quarantine action which had been taken or which was being contemplated by other cotton-growing States with respect to Louisiana and Texas, it seemed desirable prior to the issuance of a Federal quarantine to call a conference of all the cotton-growing States to consider and pass upon the proposed Federal quarantine. Such conference was called at Washington July 14, 1920, and was attended by official and other representatives of eight States. The preliminary draft of the Federal action was carefully considered at this conference and a general agreement was reached to harmonize the State action with the Federal action or to permit the Federal action to replace State quarantines.

The Federal quarantine of Texas and Louisiana on account of the pink bollworm was promulgated July 21, effective August 1, 1920, and was so drawn as to apply in its restrictions on the movement of cotton and other articles to the areas known to be infested or suspected of possible infestation in the two States concerned, but this limitation was conditioned upon the enforcement by these States of effective control measures with respect to the crops produced in the restricted districts.

EFFECTIVE WORK NOT POSSIBLE UNDER NEW TEXAS LAW.

The enforcement of the Federal quarantine under the new Texas law has been far from satisfactory and has still further fully demonstrated the inadequacy of any control system looking to extermination other than that of the complete elimination of the growth of cotton in invaded districts. As was to have been expected, scattering infestation of cotton in the Trinity Bay district began to develop in the late summer of 1920, and has now, October 1, been rather widely determined throughout that district. The pink bollworm act of 1920 provides for the prompt destruction of the

cotton in fields determined to be infested with the pink bollworm with State compensation for the crop destroyed. In spite of this provision for compensation, the opposition of planters to necessary extensions of the quarantine was immediate, and by injunction a serious check was put upon State and Federal control work. This injunction even went so far as to forbid Federal control of interstate movement but this phase has since been removed as a result of representations as to the illegality of such action made to the Texas court by direction of the Attorney General of the United States.

This outcome in Texas would seem to indicate that the State is unable to adequately cope with the local legal situation and it may become necessary to consider the extension of the existing Federal quarantine to cover the entire State as the only means of protecting the surrounding States from the movement of cotton or other materials from Texas capable of carrying the pink bollworm.

It is greatly to be regretted that the plan of extermination by the establishment of noncotton zones in infested areas, which began with such promise of success with the crop season of 1918, should have had any break in its operations. Apparently under existing conditions in Texas there seems little likelihood that such noncotton zones can be adequately enforced in the future. The failure of the authorities and citizens of Texas to make possible such enforcement must ultimately mean the loss of the opportunity which undoubtedly existed at the outset to exterminate in Texas and in the United States what is believed to be the most important of all cotton pests. The department's efforts to secure adequate cooperation by the State of Texas to this end have been unremitting.

A full record of these efforts and the action of the department in relation to the pink bollworm work in Texas is given in the Service and Regulatory Announcements of this Board for 1920.

So far as is now known, the pink bollworm infestation in Texas is confined to the southeastern district surrounding Trinity Bay. No reappearance of the pink bollworm has been reported this year from any of the other areas, namely, the Hearne area and the Pecos district, nor from any new areas in Texas. The Great Bend area and a limited area at Hearne have been maintained as noncotton zones. Eradication may still be possible, therefore, with adequate State legislation and thorough work in connection with noncotton zones.

FEDERAL AND STATE APPROPRIATIONS FOR PINK BOLLWORM WORK.

Under the belief that the work of the extermination of the pink bollworm was well advanced and that very little expensive cleaning of fields would be necessary for 1920-21, the fund for control work, which had been \$400,000 for the years 1919-20, had been reduced in the department estimates to \$225,000. This estimate was still further reduced in the bill as presented to the House by the Agricultural Committee to \$125,000.

To meet the need for a large increase in control work resulting from the appearance of the pink bollworm in certain parishes of Louisiana, and its reappearance in Texas, Congress was asked to increase the appropriation for the pink-bollworm control by \$300,000. This increase was carried in the bill as it passed the Senate, but in the conference committee the increase was reduced to \$200,000. This gives

a fund for the control and eradication of the pink bollworm for the fiscal year 1921 of \$325,000. This is exclusive of the border control appropriation of \$148,560, a fund of \$10,000 for surveys in Mexico near the border of the United States, and an item of \$5,000 for investigation of the pink bollworm as a basis for control measures. The total appropriation for pink-bollworm work is therefore \$488,560. In addition, there is available for pink-bollworm work the appropriation by the Texas Legislature of \$100,000 and by the Louisiana Legislature of \$250,000.

RESEARCH WORK IN RELATION TO PINK BOLLWORM.

LAGUNA STATION CLOSED.—The research station which has been maintained in the Laguna, Mexico, for the past two years was closed this year, research work which could be conveniently done at this time having been substantially completed. A report will soon be issued giving the results of the two years' study of the pink bollworm in Mexico. The damage to cotton in this district in Mexico in 1919 averaged about 20 per cent of the crop. Of special interest is the fact that fumigation tests have shown that infested seed can be satisfactorily disinfected with carbon bisulphide, but that hydrocyanic-acid gas at the ordinary atmospheric pressure has not sufficient penetrating powers to be effective to a greater depth than a few inches. The attempt to control the insect in the field with arsenical poisons has yielded only negative results.

The larvæ of the pink bollworm have been found to be very resistant to water and have survived 48 hours' immersion, whereas larvæ in dry bolls have survived a period of seven or eight days. This probably gives an explanation of one of the means of spread of larvæ, especially in a district like that of the Great Bend of the Rio Grande by water carriage in bolls or parts of the cotton plant which may be caught up by flood waters.

STUDY OF OTHER HOST PLANTS THAN COTTON.—A very careful survey has been conducted of the malvaceous plants along the Rio Grande and elsewhere in Texas to determine the possibility of their serving as hosts for the pink bollworm. This included not only wild plants, but also such cultivated plants as species of hibiscus and hollyhock and garden plantings of okra. In no case has the pink bollworm been found to infest any of these plants. In Texas, therefore, it so far has confined itself strictly to cotton, and this is of very great importance in connection with the efforts to exterminate the insect by establishment of noncotton areas. That the insect will feed at least on okra has, however, been shown by the experience in Egypt, and this has also proved to be the case in Mexico, and therefore this and possibly other related plants must be taken into consideration in control work.

BORDER QUARANTINE SERVICE.

The Texas border inspection quarantine service, which has heretofore been under the general direction of Mr. R. Kent Beattie, has recently been transferred to the direction of Mr. E. R. Sasser, and to this department has been added the general administration of all the port inspection service being conducted under the Federal plant-quarantine act, namely, the inspection offices and forces at New York, Boston, San Francisco, Seattle, and New Orleans.

In the enforcement of the Texas border inspection and quarantine service a total of 15,962 freight cars and 14,846 vehicles have been inspected and certified for entry into the United States. The car and vehicle fumigation houses referred to in previous reports were completed and put into operation on October 1, 1919, and since that date 7,772 cars have been disinfected in these houses with hydrocyanic-acid gas. The Congress, in appropriating funds for the purchase of chemicals and for labor incident to the proper fumigation of cars crossing the border, made the proviso that:

Any moneys received in payment for charges fixed by the Secretary of Agriculture on account of such cleaning and disinfection at plants constructed therefor out of any appropriation made on account of the pink bollworm of cotton to be covered into the Treasury as miscellaneous receipts.

Accordingly an initial charge of \$5 per car was made, but owing to a reduction in the cost of chemicals it was possible, on February 1, 1920, to reduce the cost per car to \$4. A fee of 50 cents is collected for each buggy, wagon, or automobile fumigated at Del Rio, Tex. During the nine months of operation \$34,381 were collected and turned into the Treasury as miscellaneous receipts.

It has been necessary to considerably enlarge this border service during the year. It now includes, in addition to the ports from El Paso eastward, Nogales, Ariz., in connection with the extension of the border traffic regulations to the State of Sonora. Since establishing this service at Nogales, on January 20, 1920, 2,725 cars have been inspected and certified for entry at that port. At present no car-fumigation facilities are available at Nogales, and it will probably be necessary to provide a large car-fumigation house at that point in the near future.

The arrival of many cars fouled with cotton seed at Juarez, Mexico, opposite El Paso, and the finding of much of this seed to be more or less infested with living pink bollworms, has necessitated a considerable enlargement of the fumigation facilities at the port of El Paso. The construction of a 15-car fumigation house at this port was begun in June, 1920, to take the place of the inadequate 1-car house which was being used to fumigate the small percentage of cars which up to that time had crossed at El Paso. As soon as the new house is completed all cars crossing at this point from Mexico into the United States will be subjected to disinfection, as is now the practice at other Texas-Mexico border ports.

The extension of this border service to include Mexican corn is discussed below. This extension has resulted in the erection by private concerns of sterilization plants at Piedras Negras and El Paso to meet the requirements of sterilization by heat. All such sterilization takes place under the supervision of inspectors of this board. Similar disinfecting plants may later be established at Brownsville, Del Rio, and perhaps other points on the border. A similar plant is under consideration at Los Angeles, Calif., for the sterilization of Mexican corn reaching that point by direct water route from Mexico.

In order to further prevent the entry of the pink bollworm and other insects subject to quarantine, inspectors have been placed at the footbridge of all of the important ports to work in cooperation with the customs officials. The wisdom of this move was soon

apparent, since 57 living larvæ of the pink bollworm were found in cotton seed and cotton bolls in suit cases of passengers. This infested seed was in possession of immigrants en route to cotton fields, where they were to be employed as laborers. Had these insects escaped the notice of the board's inspectors, they would have doubtless become established in American cotton fields. The extent of this danger may be indicated by the fact that some 15,000 laborers annually migrate from Mexico to Texas and Arizona for cotton picking. Avocados were frequently intercepted and during the month of May fully 50 per cent of the avocados reported to have been grown in the State of Michoacan were found to be infested with a weevil, which is apparently much more injurious than the avocado weevil, which was responsible for Quarantine No. 12. Incidentally it was proposed by the owner of one of the interceptions to take the infested avocados to California for the purpose of planting the seed in his avocado grove. Although this phase of the work was conducted only about six months of the year, some 1,018 interceptions have been made of contraband material, including cotton seed, seed cotton, unmanufactured cotton lint, sugar cane, peaches, sweet limes, mangoes, oranges, sweet potatoes, avocados, and various plants. Frequent attempts have been made to smuggle quarantined fruits as, for example, wrapping meat around avocados or inclosing them in a loaf of bread.

RESTRICTIONS ON ENTRY OF MEXICAN CORN ON ACCOUNT OF THE PINK BOLLWORM.

Mexican corn in considerable quantities began to be offered for entry into the United States early in January of this year. Some of this corn was known to have originated in regions infested with the pink bollworm, either near the border or in the interior of Mexico, and examinations indicated that such corn contained more or less cotton seed as well as seeds of other crops, such as beans, coffee, pumpkins, pecans, etc., indicating great carelessness in handling it, probably in connection with bins or with carts or other conveyors more or less fouled with cotton seed and the other products enumerated. Inasmuch as it proved to be thoroughly impracticable to inspect and free such corn from cotton seed or to disinfect it at the border with the means available, it was found desirable to provide by a special quarantine for suitable control of such material.

The quarantine as subsequently issued provides for the entry of Mexican corn when so ground or sterilized by heat as to eliminate all risk of carriage of cotton seed or pink bollworm larvæ. The feasibility of sterilization already had been demonstrated and was a working condition at San Francisco and Seattle with respect to corn imported from the Orient, chiefly Manchuria, for local use on the Pacific coast.

Pending the issuance of this quarantine the entry of Mexican corn was prohibited under authority granted by Congress to regulate the entry of all products from Mexico, for the purpose of excluding cotton and cotton seed. This quarantine does not apply to the State of Lower California, Mexico.

STATE OF SONORA INCLUDED UNDER REGULATIONS GOVERNING ENTRY OF PRODUCTS FROM MEXICO.

The States of Sonora and Lower California, Mexico, had not hitherto been brought under the regulations of June 23, 1917, governing the entry into the United States at border points of products from Mexico. Information indicating the possible occurrence of the pink bollworm on the west coast of Mexico made it necessary to bring the State of Sonora under the control of these regulations. This was accomplished by an amendment issued January 29, 1920. These regulations now cover all of the border ports of Mexico with the exception of those of Lower California.

ENTRY OF HAWAIIAN AND PORTO RICAN COTTON, COTTON SEED, AND COTTONSEED PRODUCTS, RESTRICTED.

In the latter part of 1919 a request came to the Federal Horticultural Board for a permit for the entry into the United States from Porto Rico of a considerable quantity of cotton seed for milling at oil mills in the Southern States. Hitherto there had been little or no movement of such seed from Porto Rico to the mainland owing to the fact that this seed under the Spanish régime and later had found its market in Europe. At that time there was no quarantine under which the proposed shipment of seed from Porto Rico to the mainland could have been prevented, but on the request of this board the shipment was withheld until an examination of the cotton situation of the island with respect to plant diseases and insect pests could be made. An investigation which has since been carried out under the direction of this board indicates the undesirability of permitting raw cotton seed or cotton lint containing seed coming to the United States from Porto Rico. Important among these reasons is the existence in Porto Rico, as well as in most of the West Indies, of a cotton blister mite (*Eriophyes gossypii* Banks), which has been the occasion of a good deal of loss to the cotton crop of these islands. This mite is not known to occur in the United States, and its entry into our cotton producing States would amount to a new tax on cotton production. For the particular purpose of excluding this mite a quarantine (No. 47) has been issued against Porto Rican cotton, cotton seed, and cottonseed products. It is known, however, that there is also in Porto Rico a cotton-boll disease, which may be even more dangerous to the cotton crop of this country than the blister mite and which might also gain entrance through the importation of cotton seed. The enforcement of the quarantine will make it necessary for the cotton seed produced in the island either to be exported to foreign countries or else to be milled or otherwise utilized on the island.

To avoid the multiplicity of quarantines the similar quarantines (Nos. 9 and 23, revised) already issued with respect to Hawaiian cotton have been incorporated in Quarantine No. 47, so that the movement of all cotton and cottonseed products from Hawaii and Porto Rico will be governed by one order and series of regulations.

THE EUROPEAN CORN BORER.

PRESENT STATUS OF PEST IN UNITED STATES AND CANADA.

The European corn borer was rather fully considered in the annual report of this board for 1919. Its status in the United States remain substantially unchanged during the season of 1920. The additions to the infested territory have been limited to the inclusion of some 150 townships in Massachusetts, New Hampshire, and in eastern and western New York, merely extending locally the range of last year. No new areas of infestation have been found in these States, nor has any infestation by this insect been located in the Mississippi Valley in connection with the surveys following up the movement of imported broom corn to various broom factories in the Middle West. The insect has not reappeared in Erie County, Pa., where it was determined last year, and may possibly have been exterminated at that point.

The important development of the corn borer situation during the year has been the discovery of two wide infestations in southern Ontario, Canada, bordering Lake Erie, one having an extent of perhaps 50 miles near Niagara, and the other of nearly 100 miles centering at St. Thomas, Ontario. The origin of the insect in Ontario seems to have been in connection with a broom factory formerly operated at St. Thomas, which in 1909 used enormous quantities of foreign broom corn and was at that time the largest broom factory in Canada. In this Canadian area of infestation corn is grown on a commercial scale, chiefly of the flint varieties, which in the United States have proved especially susceptible to the attacks of the insect. While the insect was widely distributed in the Province of Ontario, field damage of considerable amount seemed to be limited to the center of the larger area near the town of St. Thomas. In this area certain fields exhibited an amount of damage greater than that shown in any of the New York fields, not however large as compared with other important corn enemies. For example, the actual grain loss due to the borers feeding in the ears alone was estimated by the Canadian authorities as between 3 and 4 per cent in the worst infested field, and about one-half of that percentage in the next worst infested field, the latter field of the dent variety.

REVISION OF THE DOMESTIC CORN BORER QUARANTINE.

A new quarantine to prevent interstate shipment of carriers of the corn borer was promulgated by the Secretary of Agriculture, effective March 29, 1920, against the States of Massachusetts, New Hampshire, New York, and Pennsylvania. The quarantine applies only to such portions of those States as are now or may later become actually infested, although authority is reserved to extend at any time the areas officially designated as infested, to cover any extensions of spread. No restrictions are placed on shipments from points in the quarantined States outside of the infested areas.

The articles specifically covered in the quarantine are corn and broom corn, including all parts of the stalk, celery, green beans in the pod, beets with tops, spinach, rhubarb, oat and rye straw as such or when used as packing, cut flowers or entire plants of chrysanthemums, aster, cosmos, zinnia, and hollyhock, and cut flowers or entire plants of gladiolus and dahlia, except the bulbs without stems. The restric-

tions do not apply to shelled corn and clean seed of broom corn, nor to other articles after they have been manufactured or processed in such a way as to eliminate risk of carrying the corn borer.

The quarantine of 1920 revises and supersedes the original quarantine of Massachusetts on account of this insect and was necessitated by the discovery of the new important areas in New York in the fall of 1918 and the rather rapid increase of information as to distribution, together with the discovery of many additional food plants. The postponement of this revision until 1920 was occasioned by the fact that the territory invaded by this insect was so inadequately determined as to make any quarantine comparatively valueless. As a preliminary measure of control, however, the States of New York and Massachusetts agreed through their representatives to establish State quarantines covering the known invaded districts, so that there should be no interstate movement of infested products from such districts and such quarantine orders were issued by the commissioners of agriculture of New York and Massachusetts.

The enforcement of the Federal quarantine, in cooperation with corresponding State quarantines which were promptly thereafter issued, has been the chief and about the only effective control possible of this new pest by preventing or limiting its further spread through the agency of the movement of infested farm and garden products. The wide extent of this pest in Massachusetts and New York has prevented, both on the ground of expense and uncertain efficiency, general farm control over the entire regions infested, under Federal and State funds. Limited control with such funds has been and may be practicable and desirable in the future where the insect is found in considerable concentration, but in general such farm control must be assumed by the farmers concerned.

ALL FOREIGN COUNTRIES QUARANTINED ON ACCOUNT OF THE EUROPEAN CORN BORER.

The further entry of broom corn, Indian corn, and related plants, has been either prohibited or restricted in the quarantine promulgated February 21, 1920, for the purpose of preventing the further entry into the United States of this corn borer or of other dangerous insects or of plant diseases through the agency of stalks or other portions of these plants.

Broom corn for manufacturing purposes may be imported hereafter only under permit and when its condition is such that it can be satisfactorily disinfected at port of entry. Indian corn and certain related plants from all foreign countries are denied entry into the United States in the raw or unmanufactured state, except sorghum hay from Canada, and the shelled or thrashed grain from any country, of the plants included in the quarantine. The quarantine applies also to such plants related to corn as sweet sorghums, grain sorghums, sugar cane, Sudan grass, Johnson grass, pearl millet, Napier grass, teosinte, and Job's tears.

The necessity for this quarantine was demonstrated early in the year by the discovery of living larvæ of the corn borer in some 97 bales of broom corn shipped from Italy to New York, the first considerable shipment of foreign broom corn since the war period. This finding, in connection with the association of earlier importations with the infested areas in this country, would seem to defi-

nately determine that the European corn borer originally reached this country through the medium of such imported broom corn.

This quarantine was later amended (July 31, 1920) to include under its provision manufactured brooms and also the provision that the raw broom corn should be so selected in the country of export as to be free from visible evidence of infestation. The necessity for including brooms was determined as a result of an examination of a considerable importation of large Italian stable brooms. These proved to be stuffed with a considerable quantity of the actual stems of broom corn and could thus be a means of conveying the insect equally readily with unmanufactured material. At the present time, therefore, the requirement of disinfection as a condition of entry applies to both the manufactured and raw product. The only disinfection which has proven effective is by steam cooking, a process which apparently does not injure the value of the broom corn either in the raw state or as manufactured.

EXTENSION OF JAPANESE BEETLE QUARANTINE.

The Federal quarantine on account of the Japanese beetle has been twice revised during the year, namely, on April 1 and October 1, 1920. The first of these revisions had relation to the inclusion of a slight increase of the invaded territory in New Jersey and a broadening of the quarantine to cover, in addition to green or sugar corn, a large list of truck crops and other articles which might act as possible carriers of the pest.

The second revision of the quarantine (October 1, 1920) was made to take into account a further extension of this insect in New Jersey and also its extension across the river from the New Jersey territory into the border counties of Philadelphia and Bucks, in Pennsylvania. This quarantine is being enforced in cooperation with the Bureau of Entomology of this department and with the States concerned. It provides for the movement of all the articles brought under restriction under inspection and certification.

THE POTATO WART.

PRESENT DISTRIBUTION OF THE DISEASE.

The potato wart disease was last year reported as occurring in two areas in Pennsylvania, one in the eastern and the other in the southwestern part of the State, and in an area in West Virginia. The surveys of 1920 have extended these areas somewhat and the disease has been determined as occurring in western Maryland. Practically all of these occurrences are in mining regions and probably had a similar origin from foreign potatoes imported in the winter of 1911-12.

The survey planned for 1920 included a program of intensive search in mining regions in these States and also garden inspections in selected localities in settlements of a foreign character approximating in method of living and garden cultures those obtaining in mining districts. These surveys have been negative other than as to the mining districts in the States named. They were intensively conducted at a number of points in New England in centers of foreign population, and also in New York, New Jersey, Ohio, Michigan, Indiana, Illinois and Wisconsin, including coal fields in Indiana and Illinois.

The infestation as now determined in southwestern and western Pennsylvania includes points in Cambria, Clearfield, Center, Armstrong, and Huntingdon counties. The work of this year, therefore, has materially extended the infestation in this part of the State. The infested area in eastern Pennsylvania remains substantially the same as reported last year.

The intensive search made in the coal mining sections of northern and southern West Virginia did not result in the discovery of any new areas of infestation in that State. The old area in the immediate vicinity of Thomas, W. Va., was, however, slightly extended by the discovery of the disease in two neighboring villages.

The wart disease was discovered in Maryland in eastern Allegany County in three villages in the neighborhood of Frostburg. But a single infested garden was found in each village, but on account of the lateness of the season a full determination of the infestation could not be made. Furthermore, the principal potato grown in the district is the Cobbler, which is immune to the disease. There is reason to believe therefore that the disease may be more extensively present in this section than is now known. Its discovery in Allegany County, Md., is of special importance since the growing of seed potatoes is becoming a considerable undertaking in that immediate locality.

Unlike the infestation in eastern Pennsylvania, the infested localities in the soft coal regions in western Pennsylvania, Maryland, and West Virginia are apparently scattered, the disease occurring in single gardens or in a small number of gardens in each village.

RESEARCH WORK ON POTATO WART.

DETERMINATION OF IMMUNE VARIETIES OF POTATOES.—The research work in connection with the potato wart, begun in 1919, has been continued but on a more extensive scale in cooperation with the state colleges and departments of agriculture of Pennsylvania and West Virginia. Up to date some 78 named American varieties of potatoes have been tested and of these 27 have been found to be immune to the wart disease. In addition, a great many seedlings have been tested and also a considerable number of foreign varieties, English, Scotch, and German, many of which also appear to be immune varieties. It is worthy of note that all the varieties found to be immune in the tests of 1919 have retained their immunity through the second year of testing. Their reaction to the wart disease has also been the same in Pennsylvania and West Virginia.

Some of the imported immune varieties show considerable promise for general distribution in this country and stocks of these will be increased next year. The number of known American varieties immune to the wart disease now covers the range from early to late potatoes and includes several of the best commercial varieties. These stocks likewise will be much increased in 1921.

DISINFECTON OF SOIL.—Considerable progress has been made in the determination of the feasibility of disinfecting soil known to be invaded by the disease. Soil which was thus disinfected by steam and by chemicals and other means in 1919 was planted to potatoes susceptible to the disease this season and the results, while not thoroughly effective in controlling the disease, have been very promis-

ing and large yields of potatoes have been obtained on soil thus treated. The best results were obtained with steamed soil and with soil treated with Bordeaux mixture and with mercuric chloride. Further tests of such soil treatments are in progress.

MISCELLANEOUS RESEARCH NOTES.—It has been shown that the soils in the infested gardens are commonly very acid, and that infections are less severe where the soil reaction approaches neutrality. The organism has been shown also to be an acid producer in the tissues it infects. These facts indicate the desirability of more extensive studies on the relation of soil reaction to distribution of and infection by this organism, and such studies are projected for the coming winter. In general it is planned to study more intensively than heretofore the soil environment and the meteorological characteristics of the infested areas with a view to correlating with these the present and possible distribution of the wart disease in the United States.

The majority of the tomato varieties tested for reaction to the wart disease became infected and it seems probable that the tomato may not show the varietal differences in susceptibility and resistance so characteristic of the potato. While the tomato is not affected in yield by this disease, its service as an additional host makes it a factor to be considered seriously in a potato quarantine program. No new hosts have been definitely determined for this organism, but several solanaceous plants are under suspicion and a number of new species will be tested this winter.

In cooperation with the department of botany of Pennsylvania State College a method has been worked out of isolating wart sporangia from the soil, either singly or in quantity. This method will be of great service in further investigations on the germination, thermal, and toxic relations, etc., of the organism.

COOPERATION WITH OTHER BUREAUS IN ADMINISTRATION OF PLANT QUARANTINES

In addition to the corn borer, Japanese beetle, and the gipsy moth and brown-tail moth quarantines carried out in cooperation with the Bureau of Entomology, the board is cooperating with the Bureau of Plant Industry in the enforcement of the quarantine on account of the black stem rust of wheat and the quarantine on account of the white pine blister rust. The board is also cooperating in the enforcement of the State quarantines on account of the flag smut and take-all diseases of wheat, as well as enforcing the foreign quarantines promulgated by the board on account of these diseases.

COTTON, COTTON WASTE, COTTON BAGGING, AND COTTONSEED PRODUCTS IMPORTATIONS.

The restrictions on the entry of cotton, cotton waste, burlap, cotton seed, seed cotton, and cottonseed products for the purpose of excluding the pink bollworm and other pests is a part of the continuing work of the board and represents a large element of the port inspection service at the ports of entry where such importations are authorized. These ports are Boston, New York, San Francisco, and Seattle. No restrictions are placed on the entry of cotton from Lower California, Mexico, under a cooperative arrangement with the authorities of that State, except that it must come in under permit through the port of Calexico. By special arrangement,

however, a lot of 61 bales of cotton grown in Lower California was permitted entry through Yuma, Ariz. The importations shown in the accompanying tables are for the fiscal year ending June 30, 1920.

The importations of lint cotton of this year much exceed those of any fiscal year since the effective date of the cotton regulations, July 1, 1915. The following table, giving the imports for each of the years since 1915, is introduced for the purpose of comparison:

	Bales.		Bales.
1915-16.....	316, 260	1918-19.....	179, 537
1916-17.....	216, 337	1919-20.....	595, 765
1917-18.....	195, 723		

It will be noted that the figures for the fiscal year 1919-20 exceed by nearly 280,000 bales those for 1915-16, the next highest year, and that this excess of 280,000 bales is greater than the entire amount imported during each of the next three fiscal years, the excess over last year's importations being over 400,000 bales. As a natural consequence of the cessation of war activities and the reestablishment of business there has been a marked increase in the amount of Egyptian cotton imported, the importations of this year exceeding those for the last fiscal year by 273,697 bales. To these same reasons may doubtless be attributed the increase of Indian cotton, namely, 14,348 bales over that entered last year.

There is also a marked increase in the amount of cotton entered from other countries. Brazil exceeds her shipments of last year by 5,885; China, by 47,779; Mexico, by 10,614; and Peru, by 59,939.

Though the cotton waste imported this year shows an increase of 1,518 bales over last year's entries, it should be noted that the importations of last year included 13,936 bales of American cotton waste returned from Canada, where it had been shipped for war purposes, while this year only 58 bales of American cotton waste were returned.

In the amount entered burlap shows an amazing increase over last year, being nearly seven times as great. Last year 24,236 bales were entered. This year 163,383 bales were imported, an increase of practically 140,000 bales. The restricted burlap totaled 12,498 bales, of which 3,372 were fumigated at the various fumigation plants and 9,126 bales converted into paper. The burlap referred to as being converted into paper was released from fumigation under the condition that it should be immediately so converted and at factories within a short distance of the port of entry, such movement and conversion to be throughout under the control and supervision of the board.

The following tables indicate relatively the quantities of cotton, cotton waste, burlap, and cotton seed and cottonseed products imported during the fiscal year. They further indicate the country of origin and the ports of entry into the United States and will be useful for comparison with similar tables published in former annual reports.

Ginned cotton, by ports of entry and country of origin, 1919-20.

[Bales.]

Country.	Boston.	Calex-ico.	De-troit.	Fall River.	New Or-leans.	New York.	Niag-ara Falls.	Phil-adelphia.	San Fran-cisco.	Se-attle.	Yuma.	Total.
Argentina.....						98						98
Brazil.....						5,885						5,885
China.....	207					56,163			763	744		57,877
Dominican Re-public.....						83						83
Ecuador.....						20						20
Egypt.....	328,132					7,961						336,093
Haiti.....						11,560						11,560
India.....	2,295					15,961						18,256
Mexico.....		59,285				6,059					61	65,405
Nicaragua.....						36						36
Peru.....	11,000					84,730						95,730
Turks Island.....						14						14
United States.....	2,207		2	140	574	291	1,257	21				4,492
Venezuela.....						173						173
Unknown.....	1					42						43
Total.....	343,842	59,285	2	140	574	189,076	1,257	21	763	744	2 61	595,765

¹ Includes 10,038 bales of unginned cotton from Imperial Valley, Lower California, Mexico.² Unginned from Imperial Valley, Lower California, Mexico.*Cotton waste, by country of origin and port of entry, 1919-20.*

[All figures represent running bales.]

Country.	Boston.	Gal-veston.	New York.	Phila-delphia.	St. Albans.	San Fran-cisco.	Seattle.	Ta-coma.	Total.
Canada.....	762		100	74	212				1,148
China.....									304
England.....	832	54	837	2,759		4	150	150	4,482
France.....			1,525						1,525
Holland.....			59	50					109
Italy.....			4,389						4,389
Japan.....	589		3,190			35	61		3,875
Mexico.....			120						120
Scotland.....			45						45
Spain.....			853						853
Straits Settlement.....							70		70
United States.....	44		14						58
Total.....	2,227	54	11,132	2,883	212	39	281	150	16,978

Bagging, by country of origin and port of entry, 1919-20.

[All figures represent running bales.]

Country.	Balti-more.	Boston.	New Orleans.	New York.	Phila-delphia.	Port Huron.	Provi-dence.	Seattle.	Total.
Belgium.....	197	2,832		7,788	602				11,419
Canada.....		12,013	100	458		565			13,136
Canal Zone.....				172					172
Cuba.....				3					3
Denmark.....				1,713	308				2,021
England.....	2,374	17,038	3,762	27,855	19,516		149		70,694
France.....		617		25,436	666				26,719
Germany.....				274					274
Holland.....	2,438	272		14,891	1,004				18,605
Italy.....		8		1,537					1,545
Japan.....								2,826	2,826
Newfoundland.....				3					3
Portugal.....				164					164
Scotland.....		3,821		6,765	164				10,750
Spain.....				4,581					4,581
Switzerland.....				471					471
Total.....	5,009	36,601	3,862	92,111	22,260	565	149	2,826	163,383

Cotton seed and cottonseed products, 1919-20.

Port.	Cotton seed.	Cotton- seed cake.	Cotton- seed meal.	Cotton- seed oil.
	Tons.	Tons.	Tons.	Gallons.
Calxico.....	23,952			
Eagle Pass.....		14,784		469,000
Laredo.....		868		24,762
New York.....			1,202	
San Francisco.....		2,724		
Seattle.....		418		
Total.....	23,952	18,794	1,202	493,762

NURSERY STOCK, PLANT AND SEED IMPORTATIONS.

Quarantine 37, which applies new and important prohibitions and restrictions on the entry into the United States of nursery stock, plants, and seeds, became effective June 1, 1919. The fiscal year ending June 30, 1920, therefore, represents the first year's record of the enforcement of this quarantine. Under this quarantine three classes of entry are provided for.

1. Entry of fruits, vegetables, cereals, and other plant products which are capable of propagation, intended for medicinal, food, or manufacturing purposes; and field, vegetable, and flower seeds. These classes are permitted entry without permit or other restrictions, and therefore no record has been kept by the board of such importations.

2. Nursery stock and other plants and seeds for which permit is required but of which unlimited commercial importation is permitted. This class is restricted to five categories, chiefly certain bulbs, fruit stocks and rose stocks and seeds of trees and ornamental shrubs for propagation.

3. Entry of any of the prohibited classes of nursery stock under special permits for the purpose of keeping the country supplied with new varieties and necessary propagating stock; in other words, for the establishment of reproduction enterprises in this country so that as soon as possible this country shall be independent of all foreign supplies of that character.

IMPORTATIONS OF NURSERY STOCK AND OTHER PLANTS OF WHICH FREE COMMERCIAL ENTRY IS PERMITTED.

The following three tables record the importations of nursery stock and other plants and seeds of which unlimited commercial importation under regulation 3 is provided for in the quarantine under permit. The records of importations given in these tables are based on the notice of arrival viséed by the customs officers as is required under the quarantine, and therefore represent probably as accurate information of the plants thus imported as is obtainable.

The first table gives a record of the importations of fruit stocks and rose stocks, together with country of origin. It is interesting to note that the importation of fruit stocks this year represents a total of 7,856,620 plants and compares therefore favorably with the total importations recorded in the annual report for the previous fiscal year, and would seem to dispose of the contention frequently made that the unavailability of foreign fruit stocks during the last fiscal

year was due in any part to the refusal of the foreign growers to sell to American importers in retaliation for Quarantine 37. It is, however, a well-known fact that during the past two years, owing to post-war conditions and failure of the fruit crop in France, the stock of seeds for the production of seedlings was very low, and whatever shortage has arisen has been due to these two causes. The number of rose stocks imported this year is about the same as for last year.

The second table indicates the number of bulbs imported under regulation 3 of Quarantine 37.

The third table is interesting as showing the general classes of tree seeds and ornamental shrubs imported during the past fiscal year and also the countries of origin.

Country of origin and nature of importations under regulation 3, Quarantine 37.

FRUIT AND ROSE STOCKS.

[Figures indicate number of plants.]

Country of origin.	Fruit stocks.							Rose stocks.
	Apple.	Plum.	Cherry.	Quince.	Pear.	Persimmon.	Unclassified.	
England.....								1,041,700
France.....	1,825,000	707,800	2,868,720	758,800	1,107,900		459,900	1,606,525
Holland.....	103,000			500	500			601,411
Ireland.....							300	115,000
Italy.....								
Japan.....						24,200		
Scotland.....								150,000
Total.....	1,928,000	707,800	2,868,720	759,300	1,108,400	24,200	460,200	3,514,636

BULBS.

[Figures indicate number of bulbs.]

Country of origin.	Lily.	Lily of the valley.	Narcissus.	Hyacinth.	Tuftp.	Crocus.	Unclassified.
Azores.....	14,000						
Bermuda.....	115,189						
China.....			603,900				
England.....		800	669,356	7,000	12,500		
France.....	931,487		26,487,101		2,278,125		336,790
Germany.....		3,974,885	150,050				
Holland.....	128,929	5,989,162	28,076,321	16,368,494	47,681,559	3,977,892	1,317,000
Japan.....	13,349,331		46,190				
Total.....	14,538,936	9,964,847	56,032,918	16,375,494	49,972,184	3,977,892	1,653,790

Country of origin and nature of importations under regulation 3, Quarantine 37—Continued.

SEEDS.

[Figures indicate pounds unless otherwise designated.]

Country of origin.	Coniferous tree.	Deciduous tree.	Fruit tree.	Palm.	Shrubs.	Perennials.	Unclassified.
Argentina.....				150			
Australia.....		19½		35,600			
Austria.....	1,030	350	800				425
Brazil.....				7,438			
Canada.....	5						
Denmark.....	95		25		7		
England.....				400			
France.....	11	13½	34,383	100	213	11½	388
Germany.....	1,770		300				
Holland.....					8	2	
Italy.....			900				
Japan.....	269½	6	434½		1	42½	11
New South Wales.....				3,000			
Norway.....	50						650
Trinidad.....				500			
Total.....	3,230½	389½	36,842½	47,188	229	44½	1,474

1 Ounces.

IMPORTATION OF NURSERY STOCK AND OTHER PLANTS FOR PROPAGATION ONLY.

As already noted, provision is made in Quarantine 37 for the entry under special permit of limited quantities of otherwise prohibited nursery stock and other plants for the purpose of keeping the country supplied with new varieties and necessary propagating stock. The question of availability of plant material for which special permits are requested is passed upon by a committee of specialists of the Bureau of Plant Industry. The issuance of such permits is then based on the recommendations of this committee.

Three hundred and eleven special permits were issued during the period from June 1, 1919, the date on which Quarantine 37 became effective, to June 30, 1920, a period of 13 months. These permits included a wide range of plant materials and are each issued for a specific importation of plants. The importations authorized have already been made in the case of approximately 174 of these permits. The other permits have been canceled for a number of reasons, as a general rule because of the inability of the grower to secure the desired stock or because of transportation difficulties abroad and other similar hindrances.

The material thus imported was found as a whole fairly free from dangerous insects or fungus diseases. It was, however, necessary to destroy several shipments because of the presence of injurious insects which could not have been eliminated by any known treatment. In spite of the fact that emphasis has been made at all times on the necessity of bringing in plant material free of sand, soil, or earth about the roots, 12 shipments were found the roots of which in whole or in part were embedded in soil. These shipments were returned to country of origin or destroyed.

A large number of special permits have been issued also for the fiscal year ending June 30, 1921. The record of these permits is not included in the following tables, which give the classes of plants actually imported up to June 30, 1920, country of origin, and the States to which the imported plants were distributed. The actual

number of plants entered under each special permit is not given, but in most instances was not large.

Country of origin and nature of importations of nursery stock under special permit June 1, 1919, to June 30, 1920.

Country of origin.	Bulbs.	Herbaceous perennials.	Orchids.	Roses.	Deciduous shrubs.	Evergreen shrubs.	Florists' stock.	Coniferous.	Finished fruit trees.
Belgium.....						1			
Bermuda.....	2								
England.....	5	11	23	4			4		2
France.....	12			3	8	2	4	1	
Germany.....		1							
Holland.....	41	19		4	2	7		4	
Ireland.....		1		9					
Japan.....	1					5	2		1
Mexico.....	1								
Philippines.....			1						
Spain.....							1		
Trinidad.....							1		

NOTE.—Figures denote number of special permits under which importations were actually made. There is some duplication in these figures since a number of lots included material falling into two or more classes.

Distribution by States of importation of nursery stock under special permit.

Connecticut.....	1	New York.....	38
California.....	21	Ohio.....	11
District of Columbia.....	1	Oregon.....	1
Florida.....	3	Pennsylvania.....	18
Illinois.....	11	Rhode Island.....	1
Indiana.....	2	Tennessee.....	1
Massachusetts.....	17	Texas.....	2
Michigan.....	7	Virginia.....	3
Minnesota.....	1	Washington.....	6
Missouri.....	1	Wisconsin.....	1
New Hampshire.....	2		
New Jersey.....	25	Total.....	174

INSPECTION OF IMPORTED PLANTS AND PLANT PRODUCTS.

In spite of the reduction in the number of plants imported into the United States during the past fiscal year as the result of Quarantine 37, the total number of different kinds of insects (290 species) intercepted exceeds that of any previous fiscal year. This increase in the number of interceptions can probably be explained by the fact that all plants imported under special permit were examined under very favorable conditions by expert inspectors at Washington, D. C. Moreover, this material did not arrive in large quantities and it was possible to give each plant a very careful examination. Some of the more important interceptions follow: Gipsy moth egg masses on shipments of nursery stock from France; pink bollworm in shipments from China, Japan, and Mexico; potato tuber moth from Australia, Chile, Costa Rica, and Panama; the sorrel cutworm from France; spiny citrus white fly from Cuba; West Indian fruit fly from Jamaica and Cuba; injurious avocado weevils from Mexico, Guatemala, and the Canal Zone; apple-seed chalcis from Germany; wireworm, injurious to potatoes, from Denmark; sweet-potato weevil from Bahama, Cuba, and Porto Rico; West Indian sweet-potato weevil from Antigua and Porto Rico, and

two other injurious sweet-potato weevils from Hawaii and Jamaica. Numerous other pests were collected, including scale insects, mites, and ants.

INSPECTION OF PLANT-INTRODUCTION GARDENS.

As in former years, the board has continued to conduct inspections of the various plant-introduction gardens maintained by the Department of Agriculture at Yarrow, Md.; Miami and Brooksville, Fla.; Savannah, Ga.; and Chico, Calif., and the field station of the Office of Dry Land Agriculture, at Mandan, N. Dak.

PORT INSPECTION SERVICE.

The inspection and disinfection of plants and plant products required as a condition of entry at the principal ports of the United States has been continued substantially along the lines described in previous reports. Numerous interceptions have been made at the port of New York, including a large shipment of Italian broom corn infested with the European corn borer. A careful inspection has been made of all foreign boats arriving at New Orleans, 1,608 in number, 289 of which carried contraband material either as cargo, ships' stores or in passengers' baggage. Exclusive of Canadian arrivals, 195 foreign ships were inspected at Seattle, 77 of which carried contraband material. The work at this port also included the supervision of cotton fumigation and corn sterilization.

In order to strengthen the plant-quarantine service of the State of California, the board has placed a trained pathological inspector at San Francisco to assist and cooperate with the State inspectors at that port. As in the past, the plant-quarantine inspectors of California as well as of the State of Florida are carried as collaborators of this board. In order to further safeguard against the entry into the United States of quarantined products or injurious insects and plant diseases inspectors have been placed at Portland, Oreg.; Philadelphia, Pa.; and Norfolk, Va. Moreover, it is proposed to study the conditions at other ports and if necessary establish an inspection service at the places presenting the most danger. It is understood that all port work is conducted in close cooperation with the customs officials.

The matter of strengthening the port-inspection service was brought strongly to the attention of Congress in connection with the estimates for the fiscal year ending June 30, 1921, and \$100,000 was included in the estimates for this purpose. Of this amount, \$76,756 was appropriated by Congress. The enlargement of the work under the plant-quarantine act leads to a constant growth in the requirements of this port-inspection service and the funds available are still very inadequate to give the service and protection which is necessary to secure the full benefits of the plant-quarantine act. Most of the increase granted last year will be taken up in strengthening the existing service and extensions of the service to the ports of greatest danger which it has not been possible hitherto to safeguard.

NEW PLANT QUARANTINES.

The following foreign and domestic quarantines and other restrictive orders have been promulgated or revised during the year:

Domestic.—The European corn borer quarantine (a revision), the Japanese beetle quarantine (a revision), the gipsy moth and brown-

tail moth quarantine (a revision), the pink bollworm quarantine, and the Hawaiian and Porto Rican cotton, cotton seed, and cottonseed products quarantine.

Foreign.—The flag smut and take-all quarantine, the Mexican corn quarantine, the European corn borer and other dangerous insect pests and plant disease quarantine, and the stocks, cuttings, scions and buds of fruits quarantine.

The European corn borer, Japanese beetle, and the gipsy moth and browntail moth quarantines were revised to cover the additional territory invaded by these pests during the year.

The European corn-borer quarantine, which originally applied only to a restricted area in eastern Massachusetts, has been extended to include the States of New Hampshire, New York, and Pennsylvania.

In the case of the gipsy moth and brown-tail moth quarantine, the range of the gipsy moth was extended considerably, especially westward, owing to favorable winds. With respect to the brown-tail moth, however, it was found possible to materially reduce the territory quarantined on account of this pest. The heavy mortality of the pest in the brown-tail webs during the winter, the work of introduced parasites, direct field work against the insect, and the work of the brown-tail fungus were all contributing factors in the reduction of the area infested by the brown-tail moth.

AMENDMENT TO PLANT QUARANTINE ACT AUTHORIZING CONTROL OF PLANTS AND PLANT PRODUCTS FOR THE DISTRICT OF COLUMBIA.

The proposed amendment to the plant quarantine act, which was submitted to the last two Congresses, was approved by the last Congress in connection with the act making appropriations for this department for the fiscal year ending June 30, 1921. It has for its purpose the giving of authority to regulate the movement of plants and plant products, including nursery stock, from or into the District of Columbia, and to control injurious plant diseases and insect pests within said district. These powers are such as are exercised in practically all the States and territories of the United States and are necessary for the alignment of the District of Columbia with plant-pest control exercised elsewhere. Prior to the enactment of this amendment there was no law under which such control could be exercised in the District of Columbia. As a result at least one and perhaps other important fruit and plant pests have gained entry and spread into adjacent States through the District of Columbia.

In pursuance of the authority given by this amendment, rules and regulations governing such movement of plants and plant products into and out of the District of Columbia, effective on and after September 1, 1920, were promulgated by the Secretary of Agriculture August 26, 1920.

Under the authority of this act also terminal inspection of mail shipments of plants and plant products received in the District of Columbia has been established under the act of May 4, 1915, embodied in section 478½, Postal Laws and Regulations. The plants and plant products subject to terminal inspection in the District of Columbia are described as follows:

All florists' stock, trees, shrubs, vines, cuttings, grafts, scions, buds, fruit pits and other seeds of fruit and ornamental trees or shrubs, and other plants and plant products in the raw or unmanufactured state, except vegetable and flower seeds.

CONVICTIONS FOR VIOLATIONS OF THE PLANT QUARANTINE ACT.

During the year reports were received from the Solicitor of the department of the conviction of two shippers for violations of the plant quarantine act, one in regard to the gipsy moth and brown-tail moth quarantine, and the other in regard to the white pine blister rust quarantine.

LIST OF CURRENT QUARANTINE AND OTHER RESTRICTIVE ORDERS.

QUARANTINE ORDERS.

The numbers assigned to these quarantines indicate merely the chronological order of issuance of both domestic and foreign quarantines in one numerical series. The quarantine numbers missing in this list are quarantines which have either been superseded or revoked. For convenience of reference these quarantines are here classified as domestic and foreign.

DOMESTIC QUARANTINES.

Date palms.—Quarantine No. 6: Regulates the interstate movement of date palms or date-palm offshoots from Riverside County, Calif., east of the San Bernardino meridian; Imperial County, Calif.; Yuma, Maricopa, and Pinal Counties, Ariz.; and Webb County, Tex.; on account of the Parlatoria scale (*Parlatoria blanchardi*) and the Phoenicococcus scale (*Phoenicococcus marlatti*).

Hawaiian fruits.—Quarantine No. 13, revised: Prohibits or regulates the importation from Hawaii of all fruits and vegetables, in the natural or raw state, on account of the Mediterranean fruit fly and the melon fly.

Sugar cane.—Quarantine No. 16: Prohibits the importation from Hawaii and Porto Rico of living canes of sugar cane, or cuttings or parts thereof, on account of certain injurious insects and fungous diseases.

Five-leaved pines, Ribes, and Grossularia.—Quarantine No. 26, as amended: Prohibits the interstate movement of five-leaved pines, currant and gooseberry plants from all States east of and including the States of Minnesota, Iowa, Missouri, Arkansas, and Louisiana to points outside of this area; prohibits, further (1) the interstate movement of five-leaved pines and black-currant plants to points outside the area comprising the States of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, and New York, and (2) to protect the State of New York, the movement from the New England States, on account of the white-pine blister rust.

Sweet potato and yam.—Quarantine No. 30: Prohibits the movement from the Territories of Hawaii and Porto Rico into or through any other Territory, State, or District of the United States of all varieties of sweet potatoes and yams (*Ipomoea batatas* and *Dioscorea* spp.), regardless of the use for which the same are intended, on account of the sweet-potato weevil (*Cylas formicarius*) and the sweet-potato scarabee (*Euscepes batatae*).

Banana plants.—Quarantine No. 32: Prohibits the movement from the Territories of Hawaii and Porto Rico into or through any other Territory, State, or District of the United States of any species or variety of banana plants (*Musa* spp.), regardless of the use for which the same are intended, on account of two injurious weevils, *Rhabdocnemis obscurus* and *Metamasius hemipterus*.

Black stem rust.—Quarantine No. 38: Prohibits the movement interstate to any point outside of the quarantined area of the common barberry and its horticultural varieties, as well as certain other species of Berberis and Mahonia, on account of the black stem rust of wheat, oats, barley, rye, and many wild and cultivated grasses.

European corn borer.—Quarantine No. 43 as amended: Regulates the movement interstate to any point outside of the quarantined area of corn and broom corn (including all parts of the stalk), celery, green beans in the pod, beets with tops, spinach, rhubarb, oat and rye straw as such or when used as packing, cut flowers or entire plants of chrysanthemum, aster, cosmos, zinnia, hollyhock, and cut flowers or entire plants of gladiolus and dahlia, except the bulbs thereof, without stems, on account of the European corn borer (*Pyrausta nubilalis*).

Gipsy moth and brown-tail moth.—Quarantine No. 45: Regulates the movement interstate to any point outside of the quarantined towns and territory, or from points in the generally infested area to points in the lightly infested area, of stone or quarry products, and of the plants and the plant products listed therein. The quarantine covers all the New England States.

Pink bollworm.—Quarantine No. 46: Prohibits the interstate movement from the infested and regulated areas of Texas and Louisiana of cotton, including all parts of the plant, seed cotton, cotton lint, linters, gin waste, and all other forms of cotton lint, cotton seed, cottonseed hulls, cottonseed cake and meal, bagging and other containers of the articles enumerated, and also railway cars, boats, and other vehicles which have been used in conveying cotton and cotton products grown in the infested districts or

which are fouled with such products, hay and other farm products, farm household goods, and farm equipment, except as provided in the rules and regulations supplemental thereto, on account of the pink bollworm of cotton (*Pectinophora gossypiella* Saunders).

Hawaiian and Porto Rican cotton, cotton seed, and cottonseed products.—Quarantine No. 47: Regulates the movement of cotton, cotton seed, and cottonseed products from Hawaii and Porto Rico on account of the pink bollworm and the cotton blister mite, respectively.

Japanese beetle.—Quarantine No. 48: Regulates the movement interstate to any point outside of certain portions of the Counties of Burlington and Camden, N. J., and certain portions of the Counties of Philadelphia and Bucks, Pa., of (1) farm, garden, and orchard products of all kinds; (2) grain and forage crops of all kinds; (3) nursery, ornamental, and greenhouse stock, and all other plants, including bulbs and cut flowers; and (4) soil, compost, and manure other than fresh manure, on account of the Japanese beetle (*Popillia japonica*).

FOREIGN QUARANTINES.

Irish potatoes.—Quarantine No. 3: Prohibits the importation of the common or Irish potato from Newfoundland; the islands of St. Pierre and Miquelon; Great Britain, including England, Scotland, Wales, and Ireland; Germany; and Austria-Hungary, on account of the disease known as potato wart.

Mexican fruits.—Quarantine No. 5, as amended: Prohibits the importation of oranges, sweet limes, grapefruit, mangoes, achras sapotes, peaches, guavas, and plums from the Republic of Mexico, on account of the Mexican fruit fly.

Five-leaved pines, Ribes, and Grossularia.—Quarantine No. 7, as amended: Prohibits the importation from each and every country of Europe and Asia, and from the Dominion of Canada and Newfoundland, of all five-leaved pines and all species and varieties of the genera *Ribes* and *Grossularia*, on account of the white-pine blister rust.

Cotton seed and cottonseed hulls.—Quarantine No. 8, as amended: Prohibits the importation from any foreign locality and country, excepting only the locality of the Imperial Valley, in the State of Lower California, Mexico, of cotton seed (including seed cotton) of all species and varieties, and cottonseed hulls, on account of the pink bollworm. Cotton and cotton seed from the Imperial Valley may be entered under permit and regulation.

Seeds of avocado or alligator pear.—Quarantine No. 12: Prohibits the importation from Mexico and the countries of Central America of the seeds of the avocado or alligator pear, on account of the avocado weevil.

Sugar cane.—Quarantine No. 15: Prohibits the importation from all foreign countries of living canes of sugar cane, or cuttings or parts thereof, on account of certain injurious insects and fungous diseases. There are no restrictions on the entry of such materials into Hawaii and Porto Rico.

Citrus nursery stock.—Quarantine No. 19: Prohibits the importation from all foreign localities and countries of all citrus nursery stock, including buds, scions, and seeds, on account of the citrus canker and other dangerous citrus diseases. The term "citrus" as used in this quarantine, includes all plants belonging to the subfamily or tribe *Citrateae*.

European pines.—Quarantine No. 20: Prohibits, on account of the European pine-shoot moth (*Ecetria buoliana*), the importation from all European countries and localities of all pines not already excluded by Quarantine No. 7.

Indian corn or maize and related plants.—Quarantine No. 24, as amended: Prohibits the importation from southeastern Asia (including India, Siam, Indo-China, and China), Malayan Archipelago, Australia, New Zealand, Oceania, Philippine Islands, Formosa, Japan, and adjacent islands, in the raw or unmanufactured state, of seed and all other portions of Indian corn or maize (*Zea mays* L.), and the closely related plants, including all species of Teosinte (*Euchlaena*), Job's tears (*Coix*), *Polytoca*, *Chionachne*, and *Sclerachne*, on account of the downy mildews and *Physoderma* diseases of Indian corn, except that Indian corn or maize may be imported under permit and upon compliance with the conditions prescribed in the regulations of the Secretary of Agriculture.

Citrus fruit.—Quarantine No. 28: Prohibits the importation from eastern and southeastern Asia (including India, Siam, Indo-China, and China), the Malayan Archipelago, the Philippine Islands, Oceania (except Australia, Tasmania, and New Zealand), Japan (including Formosa and other islands adjacent to Japan), and the Union of South Africa, of all species and varieties of citrus fruits, on account of the citrus canker, except that oranges of the mandarin class (including satsuma and tangerine varieties) may be imported under permit and upon compliance with the conditions prescribed in the regulations of the Secretary of Agriculture.

Sweet potato and yam.—Quarantine No. 29: Prohibits the importation for any purpose of any variety of sweet potatoes or yams (*Ipomoea batatas* and *Dioscorea* spp.) from all foreign countries and localities, on account of the sweet potato weevils (*Cylas* spp.) and the sweet potato scarabee (*Euscepes batatae*).

Banana plants.—Quarantine No. 31: Prohibits the importation for any purpose of any species or variety of banana plants (*Musa* spp.), or portions thereof, from all foreign countries and localities, on account of the banana root borer (*Cosmopolites sordidus*).

Bamboo.—Quarantine No. 34: Prohibits the importation for any purpose of any variety of bamboo seed, plants, or cuttings thereof capable of propagation, including all genera and species of the tribe *Bambuseae*, from all foreign countries and localities, on account of dangerous plant diseases, including the bamboo smut (*Ustilago shiraiana*). This quarantine order does not apply to bamboo timber consisting of the mature dried culms or canes which are imported for fishing rods, furniture making, or other purposes, or to any kind of article manufactured from bamboo, or to bamboo shoots cooked or otherwise preserved.

Nursery stock, plants, and seeds.—Quarantine No. 37, as amended, with regulations (effective on and after June 1, 1919): Prohibits the importation of nursery stock and other plants and seeds from all foreign countries and localities, on account of certain injurious insects and fungous diseases, except as provided in the regulations. Under this quarantine the following plants and plant products may be imported without restriction: Fruits, vegetables, cereals, and other plant products imported for medicinal, food, or manufacturing purposes, and field, vegetable, and flower seeds. The entry of the following plants is permitted under permit: Lily bulbs, lily of the valley, narcissus, hyacinths, tulips, and crocus; stocks, cuttings, scions, and buds of fruits; rose stocks, including manetti, multiflora, briar rose, and rosa rugosa; nuts, including palm seeds; seeds of fruit, forest, ornamental, and shade trees; seeds of deciduous and evergreen ornamental shrubs, and seeds of hardy perennial plants.

Provision is also made for the issuance of special permits under safeguards to be prescribed in such permits for the entry in limited quantities of nursery stock and other plants and seeds not covered in the preceding lists for the purpose of keeping the country supplied with new varieties and necessary propagating stock.

Flag smut and take-all.—Quarantine No. 39, with regulations (effective on and after August 15, 1919): Prohibits the importation of seed or paddy rice from Australia, India, Japan, Italy, France, Germany, Belgium, Great Britain, Ireland, and Brazil on account of two dangerous plant diseases known as flag smut (*Urocystis tritici*) and take-all (*Ophiobolus graminis*). Wheat, oats, barley, and rye may be imported from the countries named only under permit and upon compliance with the conditions prescribed in the regulations of the Secretary of Agriculture.

European corn borer.—Quarantine No. 41, as amended, with regulations: Prohibits the importation of the stalk and all other parts, whether used for packing or other purposes, in the raw or unmanufactured state, of Indian corn or maize, broom corn, sweet sorghums, grain sorghums, Sudan grass, Johnson grass, sugar cane, pearl millet, napier grass, teosinte and Job's tears, from all foreign countries and localities, except as provided in the rules and regulations supplemental thereto, on account of the European corn borer (*Pyrausta nubilalis*) and other dangerous insects and plant diseases.

Mexican corn.—Quarantine No. 42, with regulations: Prohibits the importation of Indian corn or maize from Mexico, except as provided in the rules and regulations supplemental thereto, on account of the contamination of such corn with cotton seed more or less infested with the pink bollworm.

Stocks, cuttings, scions, and buds of fruits.—Quarantine No. 44: Prohibits the importation of stocks, cuttings, scions, and buds of fruits from Asia, Japan, Philippine Islands, and Oceania (including Australia and New Zealand) on account of dangerous plant diseases, including Japanese apple cankers, blister blight, and rusts, and injurious insect pests, including the oriental fruit moth, the pear fruit borer, the apple moth, etc.

OTHER RESTRICTIVE ORDERS.

The regulation of the entry of nursery stock from foreign countries into the United States was specifically provided for in the plant-quarantine act. The act further provides for the similar regulation of any other class of plants or plant products when the need therefor shall be determined. The entry of the plants and plant products listed below has been brought under such regulation:

Nursery stock.—The conditions governing the entry of nursery stock and other plants and seeds from all foreign countries and localities are indicated above under "Foreign Quarantines." (See Quarantine No. 37.)

Irish potatoes.—The importation of Irish potatoes is prohibited from the countries enumerated in the potato quarantine. Potatoes may be admitted from other foreign countries under permit and in accordance with the provisions of the regulations issued under the order of December 22, 1913, bringing the entry of potatoes under restriction on account of injurious potato diseases and insect pests. Importation of potatoes is now authorized from the following countries: Denmark, Cuba, Bermuda, and the Dominion of Canada. The regulations issued under this order have been amended so as to permit, free of any restrictions whatsoever under the plant-quarantine act, the importation of potatoes from any foreign country into the Territories of Porto Rico and Hawaii for local use only and from the Dominion of Canada and Bermuda into the United States or any of its Territories or Districts.

Avocado, or alligator pear.—The order of February 27, 1914, prohibits the importation from Mexico and the countries of Central America of the fruits of the avocado, or alligator pear, except under permit and in accordance with the other provisions of the regulations issued under said order on account of the avocado weevil. Entry is permitted through the port of New York only and is limited to the large, thick-skinned variety of the avocado. The importation of the small, purple, thin-skinned variety of the fruit of the avocado and of avocado nursery stock under 18 months of age is prohibited.

Cotton.—The order of April 27, 1915, prohibits the importation of cotton from all foreign countries and localities, except under permit and in accordance with the other provisions of the regulations issued under said order, on account of injurious insects, including the pink bollworm. These regulations apply in part to cotton grown in and imported from the Imperial Valley, in the State of Lower California, in Mexico.

Corn.—The order of March 1, 1917 (Amendment No. 1, with Regulations, to Notice of Quarantine No. 24), prohibits the importation of Indian corn or maize in the raw or unmanufactured state from the countries and localities listed in Notice of Quarantine No. 24, except under permit and in accordance with the other provisions of the regulations issued under said order, on account of injurious diseases of Indian corn.

Cottonseed products.—The order of June 23, 1917, prohibits the importation of cottonseed cake, meal, and all other cottonseed products, except oil, from all foreign countries, and a second order of June 23, 1917, prohibits the importation of cottonseed oil from Mexico, except under permit and in accordance with the other provisions of the regulations issued under said orders, on account of injurious insects, including the pink bollworm.

Citrus fruits.—The order of June 27, 1917 (Notice of Quarantine No. 28, with Regulations), prohibits the importation from the countries and localities listed therein of all species and varieties of citrus fruits, excepting only oranges of the mandarin class (including satsuma and tangerine varieties), on account of the citrus-canker disease. Oranges of the mandarin class (including satsuma and tangerine varieties) may be imported under permit and in accordance with the other provisions of the regulations issued under said order.

Indian corn, broom corn, and related plants.—The order of February 21, 1920 (Notice of Quarantine No. 41, with Regulations), prohibits the importation in the raw or unmanufactured state of the stalk and all other parts of Indian corn or maize, broom corn, sweet sorghums, grain sorghums, Sudan grass, Johnson grass, sugar cane, including Japanese varieties, pearl millet, napier grass, teosinte, and Job's tears from all foreign countries and localities on account of the European corn borer and other dangerous insects and plant diseases. The regulations issued under said order permit the importation without restriction of sorghum hay from Canada and clean shelled or threshed grain, from any country, of the plants covered by this order. Provision is also made for the importation of broom corn under permit and in accordance with the other provisions of the regulations for manufacturing purposes.

Mexican corn.—The order of February 21, 1920 (Notice of Quarantine No. 42, with Regulations), prohibits the importation of Indian corn or maize from Mexico, except under permit and in accordance with the other provisions of the regulations issued under said order, on account of contamination of such corn with cotton seed more or less infested with the pink bollworm.

Stocks, cuttings, scions, and buds of fruits.—The order of March 24, 1920 (Notice of Quarantine No. 44), prohibits the importation of stocks, cuttings, scions, and buds of fruits for or capable of propagation from Asia, Japan, Philippine Islands, and Oceania (including Australia and New Zealand) on account of certain dangerous plant diseases and injurious insect pests. Provision is made for the importation under special permits issued by the Secretary of Agriculture of limited quantities of stocks, cuttings, scions, and buds of fruits from the countries and localities named for the purpose of keeping the country supplied with new varieties and necessary propagating stock.





